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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/702,193	JAGADEESAN, RAMANATHAN T.	
	Examiner	Art Unit	
	Benjamin R Bruckart	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Detailed Action

Claims 1-44 are pending in this Office Action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Claims 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Claims 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Claim17 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Claims 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Claims 31- 34 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Claims 41 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,435,804 by Tan.

Regarding claim 1, a transmitting device comprising (Tan: col. 2, lines 29-34):

an input for receiving data that represents sound (Tan: col. 1, lines 15-25; Abstract – voice; col. 3, lines 35-39);

a low pass filter for selecting a first group of the data that represents sound within a low portion of a sound bandwidth (Tan: col. 2, line 67);

a high pass filter for selecting a second group of the data that represents sound within a high portion of the sound bandwidth(Tan: col. 2, line 66); and

a transmit buffer for transmitting to a network the first data group in a first packet and the second data group in a second packet distinct from the first packet (Tan: col. 3, line 41; col. 2, lines 34-37).

Regarding claim 2, the device of claim 1, further comprising:

encoding means for encoding the first data group and the second data group prior to transmitting it (Tan: col. 2, lines 66).

Regarding claim 5, a receiving device comprising (Tan: col. 2, line 68):

a network interface for coupling to a network (Tan: col. 2, lines 58-64); and

a processor coupled with the network interface (Inherent in communication and data processing systems; col. 1, lines 10-13), wherein the processor is adapted to receive a first packet and a second packet from the network (Tan: col. 2, lines 68 – col. 3, line 5),

extract a first group of data from the first packet representing sound belonging in a first band of a sound bandwidth (Tan: col. 3, lines 46-55),

extract a second group of data from the second packet representing sound belonging in a second band of the sound bandwidth distinct from the first band (Tan: col. 3, lines 46-55), and

combine the first data group with the second data group to construct a single frame with data representing sound in both the first band and the second band (Tan: col. 3, lines 43-45).

Regarding claim 6, a receiving device comprising (Tan: col. 2, line 68):

a network interface for coupling to a network (Tan: col. 2, lines 58-64); and

a processor coupled with the network interface (Inherent in communication and data processing systems; col. 1, lines 10-13), wherein the processor is adapted to

infer a first group of data representing sound belonging in a first band of a sound bandwidth (Tan: col. 3, lines 46-55),

receive a packet from the network (Tan: col. 2, lines 68 – col. 3, line 5),

extract a second group of data from the packet representing sound belonging in a second band of the sound bandwidth distinct from the first band (Tan: col. 3, lines 46-55), and

combine the first data group with the second data group to construct a single frame with data representing sound in both the first band and the second band (Tan: col. 3, lines 43-45).

Regarding claim 7, the device of claim 6, wherein the processor is further adapted to (inherent in communication systems with computer; Tan: col. 1, lines 41-55, lines 9-13):

receive at least one additional packet (Tan: col. 2, lines 68 – col. 3, line 5), and

extract an additional first group of data from the additional packet representing sound belonging in the first band (Tan: col. 3, lines 46-55),

wherein the first data group is inferred from the additional first data group (Tan: col. 3, lines 46-55; they are separated).

Regarding claim 8, the device of claim 6, wherein

the first data group is identical to the additional data group (Tan: col. 3, lines 46-55; same bandwidth).

Regarding claim 10, an article comprising: a storage medium, said storage medium having stored thereon instructions, that, when executed by at least one device, result in (inherent in communication systems with computer; Tan: col. 1, lines 41-55, lines 9-13):

arranging data that represents sound in a plurality of frames (Tan: col. 1, lines 15-25; Abstract – voice; col. 3, lines 35-39);

dividing the data of at least one frame into a first group that represents sound within a first band of a sound bandwidth and a second group that represents sound within a second band of the sound bandwidth (Tan: col. 2, lines 40-45 frequency division; lines 66, 67);

encoding the first data group as a first packet (Tan: col. 2, lines 35-37);

encoding the second data group as a second packet distinct from the first packet (Tan: col. 2, lines 39-45); and

transmitting the first packet and the second packet through the network (Tan: col. 2, lines 35-45).

Regarding claim 11, the article of claim 10, wherein

the first band is a low-frequency band (Tan: col. 2, line 67), and

the second band is a high-frequency band (Tan: col. 2, line 66).

Regarding claim 17, an article comprising: a storage medium, said storage medium having stored thereon instructions, that, when executed by at least one device, result in (inherent in communication systems with computer; Tan: col. 1, lines 41-55, lines 9-13):

receiving a first packet and a second packet from a network (Tan: col. 2, lines 68 – col. 3, line 5);

extracting a first group of data from the first packet representing sound belonging in a first band of a sound bandwidth (Tan: col. 3, lines 46-55; Fig. 1);

extracting a second group of data from the second packet representing sound belonging in a second band of the sound bandwidth distinct from the first band (Tan: col. 3, lines 46-55; Fig. 1); and

combining the first data group with the second data group to construct a single frame with data representing sound in both the first band and the second band (Tan: col. 3, lines 43-45).

Regarding claim 18, an article comprising: a storage medium, said storage medium having stored

thereon instructions, that, when executed by at least one device, result in (inherent in communication systems with computer; Tan: col. 1, lines 41-55, lines 9-13):

inferring a first group of data representing sound belonging in a first band of a sound bandwidth (Tan: col. 3, lines 46-55; Fig. 1);

receiving a packet from a network (Tan: col. 2, lines 68 – col. 3, line 5);

extracting a second group of data from the packet representing sound belonging in a second band of the sound bandwidth distinct from the first band (Tan: col. 3, lines 46-55; Fig. 1); and

combining the first data group with the second data group to construct a single frame with data representing sound in both the first band and the second band (Tan: col. 3, lines 43-45).

Regarding claim 19, the article of claim 18, wherein the instructions further result in:

receiving at least one additional packet (Tan: col. 2, lines 68 – col. 3, line 5); and

extracting an additional first group of data from the additional packet representing sound belonging in the first band (Tan: col. 3, lines 46-55; Fig. 1),

wherein the first data group is inferred from the additional first data group (Tan: col. 3, lines 46-55; they are separated).

Regarding claim 20, the article of claim 18, wherein the first data group is identical to the additional data group (Tan: col. 3, lines 46-55; data is identical because its frequency is filtered according to a high or low band).

Regarding claim 22, a method comprising:

arranging data that represents sound in a plurality of frames (Tan: col. 1, lines 15-25; Abstract – voice; col. 3, lines 35-39);

dividing the data of at least one frame into a first group that represents sound within a first band of a sound bandwidth and a second group that represents sound within a second band of the sound bandwidth (Tan: col. 2, lines 40-45 frequency division; lines 66, 67);

encoding the first data group as a first packet (Tan: col. 2, lines 35-37);

encoding the second data group as a second packet distinct from the first packet (Tan: col. 2, lines 39-45); and

transmitting the first packet and the second packet through the network (Tan: col. 2, lines 35-45).

Regarding claim 23, the method of claim 22, wherein the first band is a low-frequency band (Tan: col. 2, line 67), and the second band is a high-frequency band (Tan: col. 2, line 66).

Regarding claim 31, a method comprising:

receiving a first packet and a second packet from a network (Tan: col. 2, lines 68 – col. 3, line 5);

extracting a first group of data from the first packet representing sound belonging in a first band of a sound bandwidth (Tan: col. 3, lines 46-55; Fig. 1);

extracting a second group of data from the second packet representing sound belonging in a second band of the sound bandwidth distinct from the first band (Tan: col. 3, lines 46-55; Fig. 1); and

combining the first data group with the second data group to construct a single frame with data representing sound in both the first band and the second band (Tan: col. 3, lines 43-45).

Regarding claim 32, a method comprising:

inferring a first group of data representing sound belonging in a first band of a sound bandwidth (Tan: col. 3, lines 46-55; Fig. 1);

receiving a packet from a network (Tan: col. 2, lines 68 – col. 3, line 5);

extracting a second group of data from the packet representing sound belonging in a second band of the sound bandwidth distinct from the first band (Tan: col. 3, lines 46-55; Fig. 1); and

combining the first data group with the second data group to construct a single frame with data representing sound in both the first band and the second band (Tan: col. 3, lines 43-45).

Regarding claim 33, the method of claim 32, further comprising:

receiving at least one additional packet (Tan: col. 2, lines 68 – col. 3, line 5); and

extracting an additional first group of data from the additional packet representing sound belonging in the first band (Tan: col. 3, lines 46-55; Fig. 1),

wherein the first data group is inferred from the additional first data group (Tan: col. 3, lines 46-55; they are separated).

Regarding claim 34, the method of claim 32, wherein the first data group is identical to the additional data group (Tan: col. 3, lines 46-55; data is identical because its frequency is filtered according to a high or low band).

Regarding claim 41, a transmitting device comprising (Tan: col. 2, lines 29-34):

input means for receiving data that represents sound (Tan: col. 1, lines 15-25; Abstract – voice; col. 3, lines 35-39);

low pass filter means for selecting a first group of the data that represents sound within a low portion of a sound bandwidth (Tan: col. 2, line 67); high pass filter means for selecting a second group of the data that represents sound within a high portion of the sound bandwidth (Tan: col. 2, line 66); and

transmit buffer means for transmitting to a network the first data group in a first packet and the second data group in a second packet distinct from the first packet (Tan: col. 3, line 41; col. 2, lines 34-37).

Regarding claim 42, the device of claim 41, further comprising:

encoding means for encoding the first data group and the second data group prior to transmitting it (Tan: col. 2, lines 66).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 4,208,716 by Porter et al ("Porter").

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 5,467,372 by Nishitani ("Nishitani").

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,389,038 by Goldberg ("Goldberg").

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,122,338 by Yamauchi ("Yamauchi").

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,389,038 by Goldberg ("Goldberg").

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,389,038 by Goldberg et al ("Goldberg") in further view of U.S. Patent No. 6,122,338 by Yamauchi et al ("Yamauchi").

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,122,338 by Yamauchi et al ("Yamauchi").

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,389,038 by Goldberg ("Goldberg").

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,122,338 by Yamauchi ("Yamauchi").

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,389,038 by Goldberg ("Goldberg").

Claim 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,389,038 by Goldberg ("Goldberg") in further view of U.S. Patent No. 6,122,338 by Yamauchi ("Yamauchi").

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,389,038 by Goldberg ("Goldberg") in further

view of U.S. Patent No. 6,122,338 by Yamauchi ("Yamauchi") in further view of U.S. Patent No. 6,606,600 by Murgia ("Murgia").

Claims 35, and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 6,606,600 by Murgia ("Murgia").

Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 5,621,660 by Chaddha et al ("Chaddha").

Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,435,804 by Tan in view of U.S. Patent No. 4,208,716 by Porter et al ("Porter").

Regarding claim 3,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the use of a switch to select data to be transmitted.

The Porter reference teaches, a switch having a first position for the transmit buffer to receive the first data group from the low pass filter, and a second position for the transmit buffer to receive the second data group from the high pass filter (Porter: col. 2, lines 50-62)

The Porter reference further teaches the system using switches overcomes interference with writing and accessing data and allows the execution of concurrent operations (Porter: col. 2, lines 26-39).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing a switch to select input to transmit as taught by Porter to overcome interference with writing and accessing data and allows the execution of concurrent operations (Porter: col. 2, lines 26-39).

Claim 4 is rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Tan and Porter et al.

Regarding claim 4, the device of claim 3, further comprising:

a delay buffer for delaying the arrival to the switch of one of the first data group and the second data group (Porter: col. 3, lines 9-11; col. 53, lines 52-55).

Regarding claim 9,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the expanding of abbreviated data.

The Nishitani reference teaches, receiving abbreviated redundant data corresponding to the first data group, and expanding the received abbreviated data (Nishitani: col. 2, lines 62-67; expansion device for compressed data, compressed data is abbreviated redundant data).

The Nishitani reference further teaches that the compression and expansion reduce transmission signal bit number and increases reception in a limited time with time-sharing (Nishitani: col.2, lines 20-26).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing compression and expansion as taught by Nishitani to reduce transmission signal bit number and increase reception in a limited time with time sharing (Nishitani: col.2, lines 20-26).

Regarding claim 12,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the details of packets and frame combinations.

The Goldberg reference teaches wherein the first packet also includes data from a second frame distinct from the first frame, and the second packet also includes data from a third frame distinct from the first and second frames (Goldberg: col. 3, lines 30-40).

The Goldberg reference further teaches the use of super-packets makes more efficient use of the bandwidth from communication protocol headers (Goldberg: col. 1, line 66- col. 2, line 2)

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing super-packets composed of different frames of data as taught by Goldberg to make more efficient use of the bandwidth resulting from communication protocol headers (Goldberg: col. 1, line 66- col. 2, line 2).

Regarding claims 13 and 14,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the expanding of abbreviated data.

The Yamauchi reference teaches wherein the instructions further result in abbreviating and transmitting redundantly the first data group through the network (Yamauchi: col. 1, lines 17-25).

The Yamauchi reference further teaches the system copes with the demand of the user and the restriction of the line speed through different bit rate compression (Yamauchi: col. 1, lines 27-31).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as

taught by Tan while abbreviating and transmitting data as taught by Yamauchi to transmit and reproduce the audio information quickly through compression (Yamauchi: col. 1, lines 27-31).

Claim 14 is rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Tan and Yamauchi.

Regarding claim 14, the article of claim 13, wherein the instructions further result in: abbreviating includes down sampling the first data group (Yamauchi: col. 1, lines 43-47).

Regarding claim 15,

The Tran reference teaches an article comprising: a storage medium, said storage medium having stored thereon instructions, that, when executed by at least one device, result in (inherent in communication systems with computer; Tan: col. 1, lines 41-55, lines 9-13):

receiving three sequential frames of data that represent sound (Tan: col. 2, lines 68 – col. 3, line 5);

dividing the data of each of the three frames into a first group that represents sound within a low band of a sound bandwidth and a second group that represents sound within a high band of the sound bandwidth (Tan: col. 2, lines 40-45 frequency division; lines 66, 67);

transmitting the first and second packets through the network (Tan: col. 2, lines 35-45).

The Tran reference does not explicitly state the details of packet and frame combinations.

The Goldberg reference teaches encoding the first data group of the first frame and the second data group of the second frame as a first packet (Goldberg: col. 3, lines 30-40) and encoding the first data group of the second frame and the second data group of the third frame as a second packet (Goldberg: col. 3, lines 30-40).

The Goldberg reference further teaches the use of super-packets makes more efficient use of the bandwidth from communication protocol headers (Goldberg: col. 1, line 66- col. 2, line 2)

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing super-packets composed of different frames of data as taught by Goldberg to make more efficient use of the bandwidth resulting from communication protocol headers (Goldberg: col. 1, line 66- col. 2, line 2).

Regarding claim 16,

The Tran and Goldberg references teach a system of transmitting audio data through filters and encoding for transmission across a network in super-packets.

The Tran and Goldberg references do not explicitly state the abbreviating of the data.

The Yamauchi reference teaches, the article of claim 15, wherein the instructions further result in abbreviating and transmitting redundantly at least one of the first data group and the second data group through the network (Yamauchi: col. 1, lines 17-25).

The Yamauchi reference further teaches the system copes with the demand of the user and the restriction of the line speed through different bit rate compression (Yamauchi: col. 1, lines 27-31).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while abbreviating and transmitting data as taught by Yamauchi to transmit and reproduce the audio information quickly through compression (Yamauchi: col. 1, lines 27-31).

Regarding claim 21,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the expanding of abbreviated data.

The Yamauchi reference teaches wherein the instructions further result in receiving abbreviated redundant data corresponding to the first data group (Yamauchi: col. 1, lines 17-25); and expanding the received abbreviated data (Yamauchi: col. 2, lines 50-52).

The Yamauchi reference further teaches the system copes with the demand of the user and the restriction of the line speed through different bit rate compression (Yamauchi: col. 1, lines 27-31).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while abbreviating and transmitting data as taught by Yamauchi to transmit and reproduce the audio information quickly through compression (Yamauchi: col. 1, lines 27-31).

Regarding claim 24,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the details of packets and frame combinations.

The Goldberg reference teaches wherein the first packet also includes data from a second frame distinct from the first frame, and the second packet also includes data from a third frame distinct from the first and second frames (Goldberg: col. 3, lines 30-40).

The Goldberg reference further teaches the use of super-packets makes more efficient use of the bandwidth from communication protocol headers (Goldberg: col. 1, line 66- col. 2, line 2)

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing super-packets composed of different frames of data as taught by Goldberg to make more efficient use of the bandwidth resulting from communication protocol headers (Goldberg: col. 1, line 66- col. 2, line 2).

Regarding claims 25 and 26,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the expanding of abbreviated data.

The Yamauchi reference teaches wherein the instructions further result in abbreviating and transmitting redundantly the first data group through the network (Yamauchi: col. 1, lines 17-25).

The Yamauchi reference further teaches the system copes with the demand of the user and the restriction of the line speed through different bit rate compression (Yamauchi: col. 1, lines 27-31).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while abbreviating and transmitting data as taught by Yamauchi to transmit and reproduce the audio information quickly through compression (Yamauchi: col. 1, lines 27-31).

Claim 26 is rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Tan and Yamauchi.

Regarding claim 26, the article of claim 25, wherein the instructions further result in: abbreviating includes down sampling the first data group (Yamauchi: col. 1, lines 43-47).

Regarding claim 27,

The Tran reference teaches a method of: receiving three sequential frames of data that represent sound (Tan: col. 2, lines 68 – col. 3, line 5);

dividing the data of each of the three frames into a first group that represents sound within a low band of a sound bandwidth and a second group that represents sound within a high band of the sound bandwidth (Tan: col. 2, lines 40-45 frequency division; lines 66, 67);

transmitting the first and second packets through the network (Tan: col. 2, lines 35-45).

The Tran reference does not explicitly state the details of packet and frame combinations.

The Goldberg reference teaches encoding the first data group of the first frame and the second data group of the second frame as a first packet (Goldberg: col. 3, lines 30-40) and encoding the first data group of the second frame and the second data group of the third frame as a second packet (Goldberg: col. 3, lines 30-40).

The Goldberg reference further teaches the use of super-packets makes more efficient use of the bandwidth from communication protocol headers (Goldberg: col. 1, line 66- col. 2, line 2)

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing super-packets composed of different frames of data as taught by Goldberg to make more efficient use of the bandwidth resulting from communication protocol headers (Goldberg: col. 1, line 66- col. 2, line 2).

Regarding claims 28 and 29,

The Tan and Goldberg references teach a system of transmitting data through filters and encoding them before sending them through a network by super-packets.

The Tan and Goldberg references do not explicitly state the expanding of abbreviated data.

The Yamauchi reference teaches abbreviating and transmitting redundantly at least one of the first data group and the second data group through the network (Yamauchi: col. 1, lines 17-25).

The Yamauchi reference further teaches the system copes with the demand of the user and the restriction of the line speed through different bit rate compression (Yamauchi: col. 1, lines 27-31).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network by super-packets as taught by Tan and Goldberg while abbreviating and transmitting data as taught by Yamauchi to transmit and reproduce the audio information quickly through compression (Yamauchi: col. 1, lines 27-31).

Claim 29 is rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Tan and Yamauchi.

Regarding claim 29, the article of claim 28, wherein abbreviating includes down-sampling (Yamauchi: col. 1, lines 43-47).

Regarding claim 30,

The Tran, Goldberg and Yamauchi references teach a system of filtering audio data and then combining the data into super-packets for transmission across the network with abbreviated data like compression and header information.

The Tran, Goldberg, and Yamauchi references do not specifically state the use of complementary band information synthesis shift.

The Murgia reference teaches, the method of claim 28, wherein abbreviating includes determining a complementary band information synthesis shift between one of the first data group and one of the second data group (Murgia: col. 15, lines 37-51; the decoder reconstructs the components according to the two receiver bands).

The Murgia reference further teaches it allows for variable bit rate codecs for greater precision to be achieved in the permitted frequency variations (Murgia: col. 2, lines 64-67) and a reduction in bit rate without an appreciable loss of quality (Murgia: col. 4, lines 39-48).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network into super-packets as abbreviated data as taught by Tan, Goldberg, and Yamauchi while employing a complementary band information synthesis shift as taught by Murgia to allow for variable bit rate codecs for greater precision to be achieved in the permitted frequency variations (Murgia: col. 2, lines 64-67) and a reduction in bit rate without an appreciable loss of quality (Murgia: col. 4, lines 39-48).

Regarding claim 38,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the use of a complementary band information synthesis shift.

The Murgia reference teaches, the method of claim 32, using a complementary band information synthesis shift to infer data in the first band from data in the second band (Murgia: col. 15, lines 37-51; the decoder reconstructs the components according to the two receiver bands).

The Murgia reference further teaches it allows for variable bit rate codecs for greater precision to be achieved in the permitted frequency variations (Murgia: col. 2, lines 64-67) and a reduction in bit rate without an appreciable loss of quality (Murgia: col. 4, lines 39-48).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing a complementary band information synthesis shift as taught by Murgia to allow for variable bit rate codecs for greater precision to be achieved in the permitted frequency variations (Murgia: col. 2, lines 64-67) and a reduction in bit rate without an appreciable loss of quality (Murgia: col. 4, lines 39-48).

Claims 35, 39 and 40 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Tan and Murgia et al.

Regarding claim 35, the method of claim 32, wherein the first data group is determined from a weighted average that includes the additional data group (Murgia: col. 11, lines 14-24).

Regarding claim 39, the method of claim 38, further comprising: receiving and decoding the complementary band information synthesis shift (Murgia: col. 15, lines 37-51; the decoder reconstructs the components according to the two receiver bands).

Regarding claim 40, the method of claim 38, further comprising:

determining the complementary band information synthesis shift from at least one other received first data group and at least one received second data group (Murgia: col. 15, lines 37-51; the decoder reconstructs the components according to the two receiver bands).

Regarding claim 36,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the use of an abbreviated data.

The Chaddha reference teaches the method of claim 32, wherein inferring is performed by: receiving abbreviated redundant data corresponding to the first data group (Chaddha: col. 3, lines 37-48; reciving end, decoders...); and expanding the received abbreviated data (Chaddha: col. 3, lines 37-48; decompressing).

The Chaddha reference further teaches this system accommodates lower bandwidth links and congestion and permits the encoder to operate independently of decoder capability (Chaddha: col. 2, lines 52-55)

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing receiving and expanding abbreviated data as taught by Chaddha to accommodate lower bandwidth links and congestion and permits the encoder to operate independently of decoder capability (Chaddha: col. 2, lines 52-55).

Claim 37 is rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Tan and Chaddha et al.

Regarding claim 37, the method of claim 36, wherein expanding includes up-sampling the abbreviated data (Chaddha: col. 3, lines 37-48; decompressing, up-sampling).

Regarding claim 43,

The Tan reference teaches a system of transmitting data through filters and encoding them before sending them through a network.

The Tan reference does not explicitly state the use of a switch to select data to be transmitted.

The Porter reference teaches, switch means having a first position for the transmit buffer means to receive the first data group from the low pass filter, and a second position for the transmit buffer means to receive the second data group from the high pass filter (Porter: col. 2, lines 50-62)

The Porter reference further teaches the system using switches overcomes interference with writing and accessing data and allows the execution of concurrent operations (Porter: col. 2, lines 26-39).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system transmitting data through filters and encoders onto a network as taught by Tan while employing a switch to select input to transmit as taught by Porter to overcome interference with writing and accessing data and allows the execution of concurrent operations (Porter: col. 2, lines 26-39).

Claim 44 is rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Tan and Porter et al.

Regarding claim 44, the device of claim 33, further comprising: delay buffer means for delaying the arrival to the switch of one of the first data group and the second data group (Porter: col. 3, lines 9-11; col. 53, lines 52-55).

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U. S. Patent No. 5,854,898 issued to Riddle et al.

U. S. Patent No. 4,188,506 issued to Schmid et al.

U. S. Patent No. 4,686,698 issued to Tompkins et al.

U. S. Patent No. 5,629,780 issued to Watson.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R Bruckart whose telephone number is (703) 305-0324. The examiner can normally be reached on 8:00-5:30 PM with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (703) 308-6662. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0324.

Benjamin R Bruckart
Examiner
Art Unit 2155

brb
Nov. 6, 2003

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER